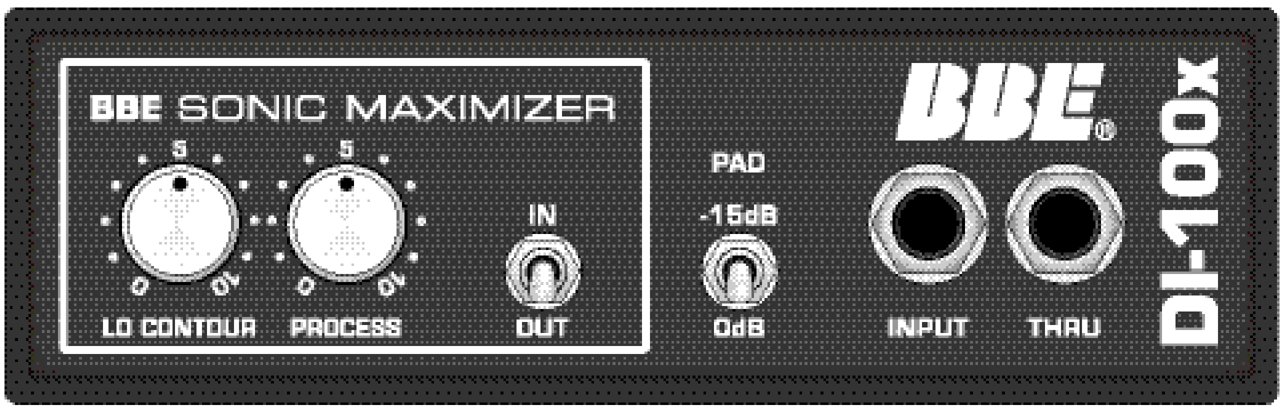
BBE® Sound Inc.

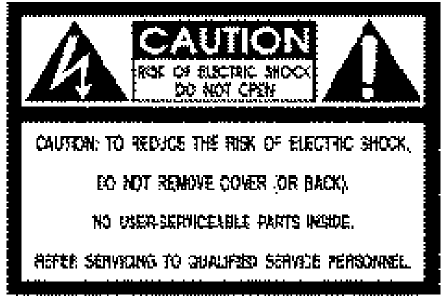
DI-100x User Manual



IMPORTANT SAFEGUARDS

For your protection, please read these safety instructions completely before operating the appliance, and keep this manual for future reference.

Carefully observe all warnings, precautions and instructions on the appliance and described in the operating instructions supplied with the appliance.

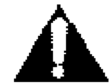


WARNING To prevent fire or shock hazard, do not expose the unit to rain or moisture.

ATTENTION: RISQUE DE CHOC ELECTRIC NE PAS OUVRIR.



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within a equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

INSTALLATION

Water and Moisture - Do not install the appliance near water: for example, near a bathtub,washbowl, kitchen sink, laundry tub,in a wet basement,or near a swimming pool.
Heat - Do not install the appliance near sources of heat such as radiators, heat registers, stoves, or other appliances that produce heat.
Ventllation - Situate the product so its location or position does not interfere with its proper ventilation. For example,you should not place the product on a bed,sofa,rug,or similar surface that might block the vent openings, or placed in a built-in installation, such as a bookcase or cabinet that might impede the flow of air through the ventilation openings.
Wall or Ceiling Mounting - If your appliance can be mounted to a wall or ceiling,mount it only as recommended.
Accessories - Do not place this product on an unstable cart, stand, tripod,bracket,or table. The product may fall, causing serious injury to a child or adult, and serious damage to the product. Use only with a cart, stand, tripod, bracket,or table recommended by the manufacturer, or sold with the product. Any mounting of the product should follow the manufacturer's instructions, and should use a mounting accessory recommended by the manufacturer.

USE

Power Source - Connect the appliance to a power supply only of the type described in the operating instructions or as marked on the appliance.
Power-Cord Protection - Route the power cord so that it is not likely to be walked on or pinched by having objects placed on it,paying particular attention to the plugs,receptacles,and the point where the cord exits from the appliance.
Grounding or Polarization - Do not defeat the grounding or polarization feature of the AC power cord.If your AC receptacle will not accept the power cord plug,contact your electrician to install a proper AC receptacle.
When not in use - Unplug the power cord of the appliance from the outlet when left unused for a long period of time.To disconnect the cord,pull it out by grasping the plug.Never pull the plug out by the cord.
AC Receptacle - Check to make sure that the AC receptacle holds the power cord plug firmly and securely. If the power cord plug is loose, contact your electrician to replace the defective and unsafe AC
Foreign Objects - Be careful that foreign objects and liquids do not enter the enclosure through openings.
Cleaning - unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.

SERVICE

Unplug the appliance from the wall outlet and consult qualified service personnel when:
• the power cord or the plug has been damaged.
• a solid object or liquid has fallen into the cabinet.
• the appliance has been exposed to rain or moisture.
• the appliance does not appear to operate normally or exhibits a marked change in performance.
• the appliance has been dropped,or the enclosure damaged.
Do not attempt to service the appliance beyond that described in the operating instructions. For all other servicing,refer to qualified service personnel only.

CONTENTS

Congratulations on your purchase of the BBE DI-100x Active Direct Box featuring the renowned Sonic Maximizer ™ Processor!

With the introduction of the DI-100x, we are now able to offer our Sonic Maximizer™ technology in an extremely high quality and ruggedly built DI.

This manual will be your guide to understanding the full functionality of the DI-100x.

DI-100X FEATURES

- Full Function BBE Sonic Maximizer™
- 15dB Pad Switch
- Ground lift switch
- Balanced transformerless XLR Output
- Impedance-balanced 1/4" Tip-Sleeve Output
- 1/4" Tip-Sleeve input and thru-put
- Mil-spec circuit boards
- Extra thick, extra wide circuit board traces for unequaled electron flow
- 1% metal film resistors throughout
- Solid 1/8" thick aluminum extrusion housing. Lightweight and extremely rugged
- Made with pride in the USA

IMPORTANT

Before you begin, please check the contents within this box to insure that included are:

1.The BBE DI-100x Active Direct Box with built-in Sonic Mazimizer™.
2.The BBE DI-100x User's Manual.
3.9VDC External Power Supply.

If any of these items are found to be damaged or missing, immediately contact the BBE dealer from whom the unit was purchased.

This manual will help you to effectively utilize the BBE DI-100x. Reviewing the information contained in this manual will answer most of the common questions that our service department receives. If you still have questions, please feel free to call 800-233-8346.

THE BBE PROCESS—"WHAT IT IS"

Loudspeakers have difficulty working with the electronic signals supplied by an amplifier. These difficulties cause such major phase and amplitude distortion that the sound reproduced by speaker differs significantly from the sound produced by the original source.

In the past, these problems proved unsolvable and were thus delegated to a position of secondary importance in audio system design. However, phase and amplitude integrity is essential to accurate sound reproduction. Research shows that the information which the listener translates into the recognizable characteristics of a live performance are intimately tied into complex time and amplitude relationships between the fundamental and harmonic components of a given musical note or sound. These relationships define a sound's “sound”.

When these complex relationships pass through a speaker, the proper order is lost. The higher frequencies are delayed. A lower frequency may reach the listener's ear first or perhaps simultaneously with that of a higher frequency. In some cases, the fundamental components may be so time-shifted that they reach the listener's ear ahead of some or all of the harmonic components.

This change in the phase and amplitude relationship on the harmonic and fundamental frequencies is technically called “envelope distortion.” The listener perceives this loss of sound integrity in the reproduced sound as "muddy" and “smeared.” In the extreme, it can become difficult to tell the difference between musical instruments, for example, an oboe and a clarinet.

BBE Sound, Inc. conducted extensive studies of numerous speaker systems over a ten year period. With this knowledge, it became possible to identify the characteristics of an ideal speaker and to distill the corrections necessary to return the fundamental and harmonic frequency structures to their correct order. While there are differences among various speaker designs in the magnitude of their correction, the overall pattern of correction needed is remarkably consistent.

The BBE Process is so unique that 42 patents have been awarded by the U.S. Patent Office.

PROCESS CONTROL

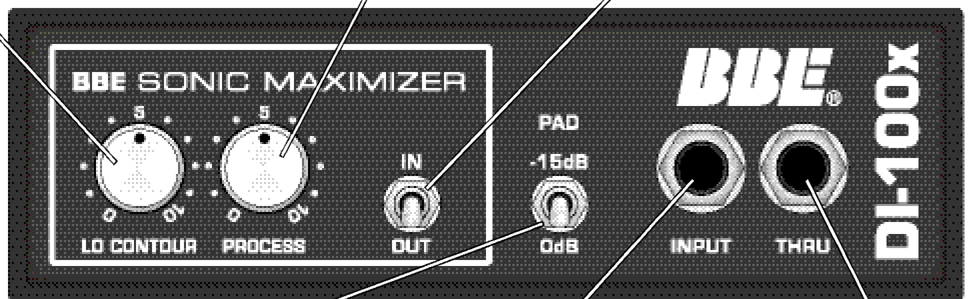
Regulates the amount of phase correction.

IN/OUT TOGGLE SWITCH

Engages the Sonic Maximizer Process. When the switch is pushed up, the BBE Process is on. When the switch is down, the BBE Process is off.

LOW CONTOUR CONTROL

Regulates the amount of phase corrected bass frequencies.



15dB PAD SWITCH

This toggle switch selects the desired gain range of the DI-100x.

When the switch is down, the DI-100x is in normal mode. When the Pad switch is up, the DI-100x input is attenuated by 15dB.

1/4" INPUT CONNECTOR

The 1/4" input connector of the DI-100x is unbalanced. The 1/4" input is designed for running instrument cables directly into the DI-100x.

1/4" THRU CONNECTOR

This 1/4 " connector is wired in parallel to the Input connector and is used for continuing the connection to the instrument amplifier.

REAR PANEL

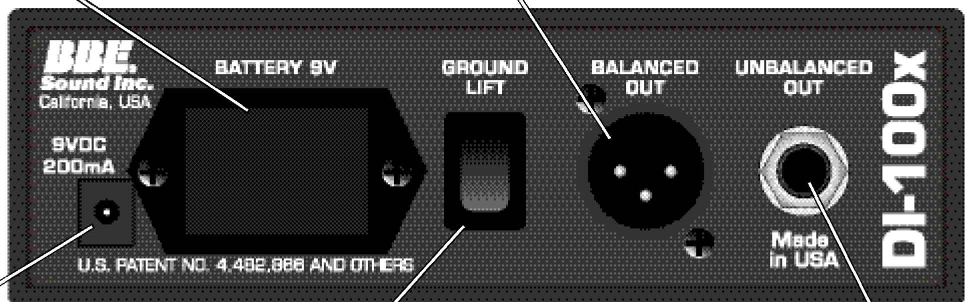
BATTERY COMPARTMENT

Use a standard 9Volt battery. Battery life is about 15 hours. Unplugging the input to the DI-100x will turn the unit off and conserve battery life.

XLR OUTPUT CONNECTOR

The XLR output of the DI-100x is balanced. The XLR output is used for running from the DI-100x directly to the input of a mixing console.

Note: The XLR and 1/4" output connectors can be used simultaneously.
XLR Pin configuration:
Pin 1 = Ground, Pin2 = Positive and Pin3 = Negative.



POWER SUPPLY CONNECTOR

Connect the included 9VDC power supply here.

GROUND LIFT SWITCH

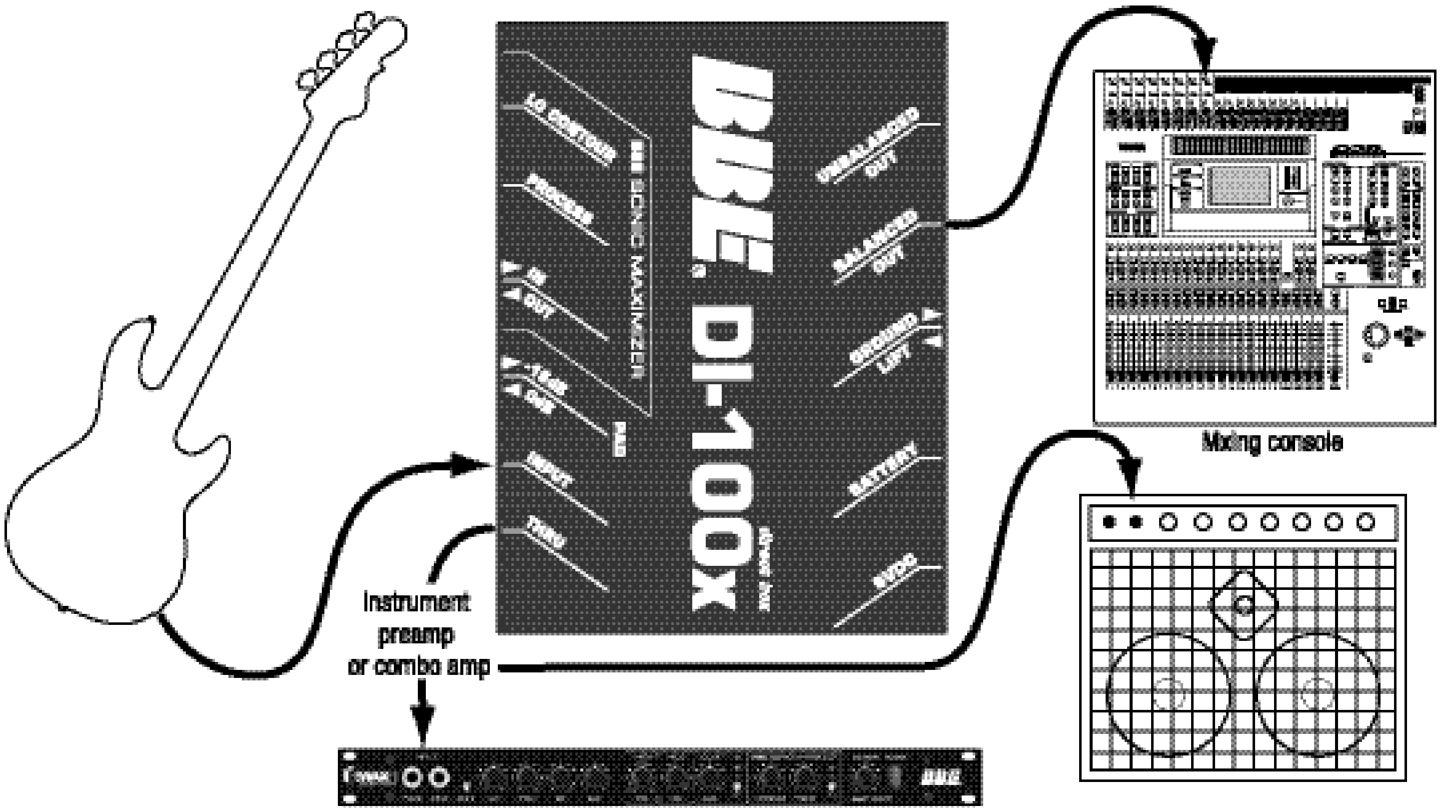
When in the "lift" position Pin 1 of the balanced XLR output (ground) is disconnected.

1/4" UN-BALANCED OUTPUT CONNECTOR

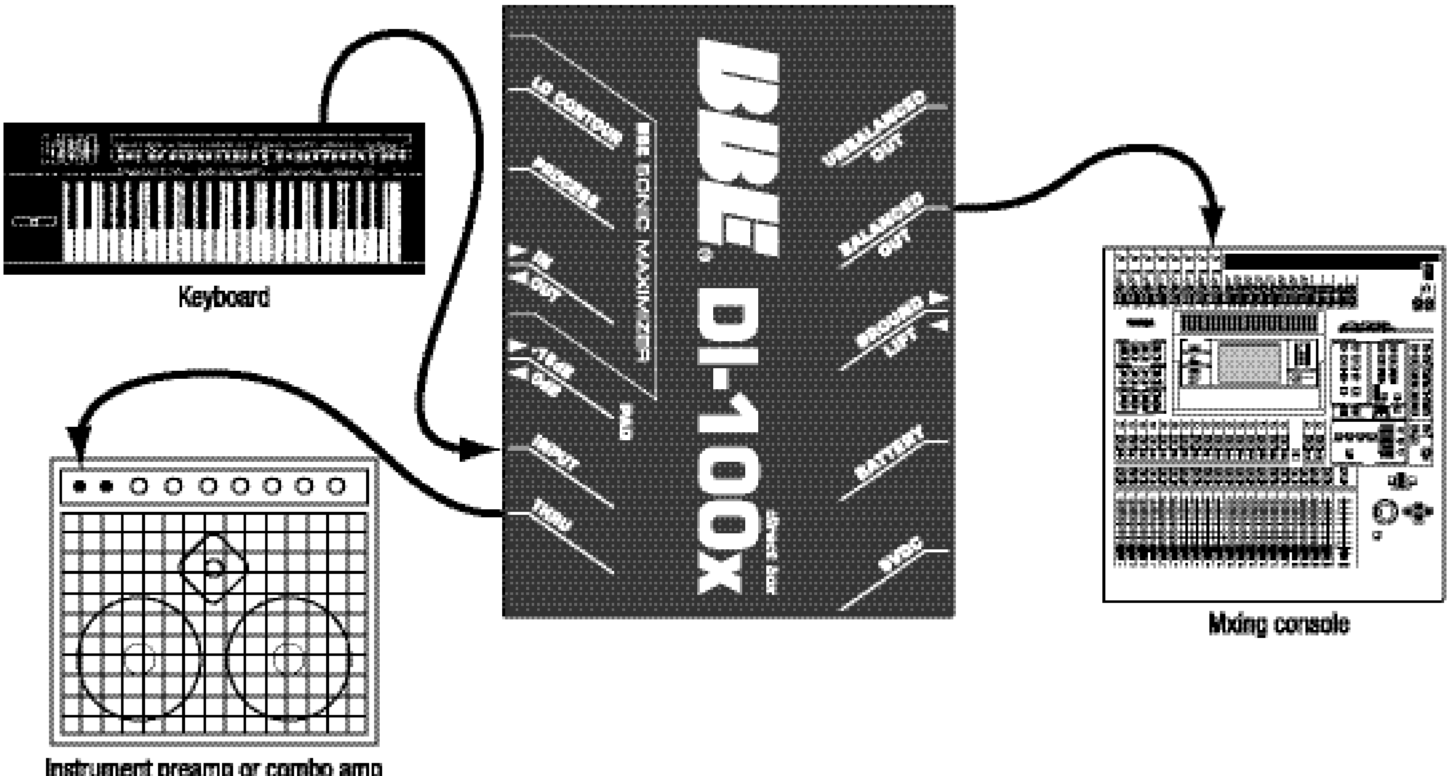
The 1/4" output connector of the DI-100x is impedance-balanced.

Note: The XLR and 1/4" output connectors can be used simultaneously.

INSTRUMENT LEVEL APPLICATION



LINE LEVEL APPLICATION



SERVICE

We recommend that if at all possible, a BBE DI-100x which requires service be sent to our facility in Huntington Beach, California. We request that a “RETURN AUTHORIZATION” be issued by the dealer from whom you purchased the unit. If this is not possible, call BBE Sound, Inc. directly at (800) 233-8346, extension 116 to obtain a “RETURN AUTHORIZATION.” Include a copy of the bill of sale with the unit when it is shipped to BBE Sound, Inc. so that the service can be expedited.

As the repair turnaround time is minimal, we request that the unit be sent to BBE Sound, Inc. We also need to add reliability data to our files so that future revision may be undertaken, if necessary, to improve the product. **If unit has been purchased outside the US, please contact your national distributor.**

MAINTENANCE

Maintenance of the BBE DI-100x is limited to proper cleaning of the unit with mild household cleaner such as Formula 409™ or Windex™. The chassis is steel , the casing is an aluminum extrusion. Both are finished with a durable polyurethane paint.

There are no user replaceable parts and the unit should not be opened for any reason unless you are a qualified technician. Calibration should be performed if parts are replaced or if a performance check-out indicates a problem with calibration. Long term use has shown that over the life of this unit there is little or no drift of the components in the BBE DI-100x which would cause a change in calibration.

WARRANTY

Warranty registration of the unit to BBE Sound, Inc. is not necessary. It is strongly recommended that you retain a copy of the bill of sale for future reference.

IT IS THE SOLE RESPONSIBILITY OF THE END USER TO PROVIDE THE BILL OF SALE OR OTHER MEANS OF PROOF OF PURCHASE TO VALIDATE THE WARRANTY IF WARRANTY SERVICE IS REQUESTED.

The BBE DI-100x is warranted against defects in material and workmanship for a period of five (5) years from date of purchase from BBE Sound Inc. or from an authorized dealer. During this period, we will repair units free of charge providing that they are shipped prepaid to:

BBE Sound, Inc.,
5381 Production Drive,
Huntington Beach, CA 92649.

We will pay return UPS shipping charges within the USA. All charges related to non-UPS shipping, including customs clearance, will be billed. The warranty will be honored for the longer of either 90 days from the date of any service or the remainder of the original 5 Year factory warranty.

This warranty will be consider null and void by BBE Sound, Inc. if any of the following is found:

1. The equipment has been physically damaged.
2. The equipment shows signs of abuse.
3. The equipment has been electrically damaged by improper connection or attempted repair by the customer or a third party.
4. The equipment has been modified without authorization.
5. The bill of sales indicates that the purchase date of the equipment is not within the warranty period.

All non-warranty repairs are warranted for a period of 90 days from the date of service.

BBE Sound, Inc. is NOT LIABLE FOR CONSEQUENTIAL DAMAGES. Should the unit fail to operate for any reason, our sole obligation is to repair it as described above.

DO NOT RETURN ANY PRODUCT TO THE ABOVE ADDRESS WITHOUT INSTRUCTIONS AND AUTHORIZATION ISSUED BY THE ABOVE LOCATION.

Frequency Response @ Line Out,
process mode:..Program Controlled
bypass mode: ....10Hz to 50kHz (+/- 1dB)
Signal to Noise Ratio:
BBE OUT ....118dB **Power Supply** ....115dB **9V battery**
BBE IN (@ 10) ....115dB **Power Supply** ....112dB **9V battery**
THD: BBE OUT ....less than 0.005% at -l0dBu input 20-20kHz
BBE IN 0.05% (20-20kHz)
Noise: BBE OUT ....-105dBu
BBE IN (@ 0) ....-94dBu
BBE IN (@ 10) ....-85dBu
Input Impedance:
instrument ....1 MEG Ohms
line..12k Ohms
Output Impedance:
XLR ....600 Ohms
line..1k Ohms

*** 0dBu = 0.775Vrms**

Power Requirements:
DC inlet: ....+9VDC min. 200ma
Battery:..9VDC 15 hour life
Dimensions: ....6.625"(W) x 4.875"(D) x 2.0625"(H)
Shipping Weight: ....3.15 lbs.

Note: Due to continuing product improvement, specifications and design are subject to change without notice.

BBE®
Sound Inc.

5381 Production Drive
Huntington Beach, CA 92649
714-897-6766 • FAX 714-896-0736

www.bbesound.com

rev. 1 3/03